

*Stated Meeting, Jan. 4, 1878.*

Present, 10 members.

Vice-President, Mr. E. K. PRICE, in the Chair.

A letter of acknowledgment was received from Prof. Oswald Heer, dated Zurich, Dec. 13, 1877 (99).

A letter of envoy was received from the Botanical Garden at St. Petersburg, Nov. 10, 1877.

Donations for the Library were received from the Asiatic Society of Japan, Yokohama; the Academies at St. Petersburg, Munich, and Madrid; the Art Union at Ulm; the Geographical Society; Bureau of Longitudes; Annales des Mines, and Revue Politique; the Royal Astronomical Society and London Nature; American Academy, and Natural History Society at Boston; Silliman's Journal; New York State Library; College of Pharmacy; Leo Lesqueroux of Columbus, O.; Commissioner of Agriculture at Washington; Botanical Gazette, Ind.; and M. Michel Chevalier of Paris.

The report of the judges of the annual election was read, by which it appeared that the following officers were duly elected for the ensuing year:

*President.*

George B. Wood.

*Vice-Presidents.*

Frederick Fraley,      Eli K. Price,      E. Otis Kendall.

*Secretaries.*

John L. LeConte,      Pliny E. Chase,      George F. Barker,  
J. Peter Lesley.

*Curators.*

Hector Tyndale,      Charles M. Cresson,      Daniel G. Brinton.

*Treasurer.*

J. Sergeant Price.

*Councillors for three years.*

Daniel R. Goodwin,                      W. S. W. Ruschenberger,  
Henry Winsor, William A. Ingham.

A letter was received from Mr. Moncure Robinson, stating that he had received from M. Chevalier, a copy of the last report of the Permanent French Committee to the Association for the construction of a submarine railroad between Calais and Dover (M. Chevalier being President of the French, and Sir John Hawkshaw, President of the English Association) for transmission to the American Philosophical Society, as a donation to the Library. Mr. Robinson expresses his high appreciation of the report, and appends to his letter a translation of it into English, made at his request by Mr. J. Percy Keating, for the gratification of members of the Society.

“PHILADELPHIA, DEC. 28, 1877.

“*J. P. Lesley, Esq., Secretary of the American Philosophical Society.*

“SIR:—I received early in November, from Mr. Michel Chevalier, the distinguished political economist and statesman, now President of the *French Association*, for the construction of a submarine railroad between Calais and Dover (Sir John Hawkshaw being President of the English), two copies of the last reports of the Permanent French Committee to the Association. These copies were transmitted me by Mr. Chevalier, accompanied by the request, that I would present one of them in his name, to the American Philosophical Society, of which he was elected a member in 1852, and of which honor he desired to present this evidence of his recollection. On reading the copy sent for myself, I was struck with the beautiful lucidity of the remarks of Mr. Chevalier, on the ‘*present condition of the undertaking.*’ They are in fact so clear, as to enable the general reader, if only moderately familiar with the French language, to appreciate correctly, even without the advantage of the accompanying maps and reports, the favorable features, as well as the difficulties and dangers of the enterprise. It seemed to me, under the circumstances, desirable to transmit with the reports of Mr. Chevalier and his distinguished co-laborers, a translation in English of the address of Mr. Chevalier, in presenting them to the Association, and I should have made myself a translation of this address, but for the kindness of a highly accomplished young friend, Mr. J. Percy Keating, of this city, who volunteered to make one for me, and who I was satisfied would execute the task much better than I could. The translation has been sent me within a few days past, and I now transmit it with the reports, for the

gratification of members of the Society, who may desire to know the views of Mr. Chevalier, in regard to the submarine railroad, but find it less irksome to read or listen to them in their mother tongue than in the French.

I avail myself of this opportunity to express my regret that though I have been for a much longer period than my friend Mr. Chevalier, a member of the Society, I have so far written nothing that seemed to me worthy of presentation and of preservation in their records. I am not, however, the less sensible on that account, of the compliment paid me in 1833, when I was elected one of its members.

Respectfully yours,  
Moncure Robinson."

*Railway under the English Channel. Address of the President, M. Michael Chevalier. Translated by Mr. J. P. Keating, of Philadelphia.*

(Read before the American Philosophical Society, Jan. 4, 1878.)

GENTLEMEN: We have deferred until to-day calling you to a general meeting from our desire to render ourselves competent to furnish you with information requisite for the solution of a problem traced out for us in our laws themselves, and which may be this way stated.

Is a submarine railway between France and England practicable without encountering extraordinary difficulties involving immense expenditure?

We desired that the studies to which we have applied ourselves ever since the passage of the act allotting the work to us, should be pushed so far as to enable us in this meeting to give you an idea of the nature and character of the material to be traversed in order to effect the subterranean passage from one shore of the Channel to the other.

It was our duty, moreover, to examine if its stratification was continuous, without presenting fissures or crevices in any appreciable number, or in any menacing proportions, whereby the sea water could penetrate into the works. It was no less interesting to know whether the bed of the intended tunnel was in its composition sufficiently impermeable to guarantee us from any irruption of the great masses of water which are alike our greatest obstacle and our greatest danger.

The work of the year 1876 has been devoted, like that of 1875, to the most minute explorations, both of the surrounding region of country, and of the bed of the Channel itself. These explorations, carried on conformably to the most approved methods, and with every care which science could suggest, have afforded a mass of results which it was necessary, in order to render them available, to group together, and mark out distinctly in sundry plans and charts. These plans, containing all that is essential to the subject matter, have been distributed among you. You have also received reports, to the number of four, in which are set forth the different methods of exploration that have been pursued. In these reports the conclusions derived from the studies are strictly deduced, and you are thus enabled to judge whether the conclusions are satisfactory.